

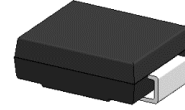
## 3A,1200V High Efficient Rectifier

### Features

- Low leakage current
- Low forward voltage drop
- Glass passivated chip junction
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- High temperature soldering guaranteed: 260°C/10 seconds



**RoHS**  
COMPLIANT



SMC (DO-214AB)

### Applications

For use of fast switching rectification in lighting, cellular phone, portable device, power supplies and other consumer applications.

Maximum Ratings & Electrical Characteristics (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	HS312	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	1200	V
Maximum RMS voltage	V <sub>RMS</sub>	840	V
Maximum DC blocking voltage	V <sub>DC</sub>	1200	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	3	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	125	A
Operating junction temperature range	T <sub>J</sub>	-55 to +150	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C

Thermal-Mechanical Specifications (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	65	°C / W
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	10	°C / W
Thermal Resistance, Junction to Lead	R <sub>θJL</sub>	15	°C / W

Electrical Specifications (T <sub>A</sub> =25°C unless otherwise noted)				
Parameter	Symbol	Test Conditions	HS312	Unit
Forward Drop Voltage	V <sub>F</sub>	I <sub>F</sub> =3A T <sub>A</sub> =25°C	1.7	V
		I <sub>F</sub> =3A T <sub>A</sub> =125°C	1.15	
Reverse leakage current @V <sub>R</sub>	I <sub>R</sub>	T <sub>J</sub> =25°C	5	uA
		T <sub>J</sub> =125°C	50	
Typical junction capacitance	C <sub>J</sub>	4.0 V 1 MHz	27.3	pF
Maximum reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A	75	nS

Note:

1. Mounted on copper pad area of 8.0 x 8.0mm to each terminal.

## Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

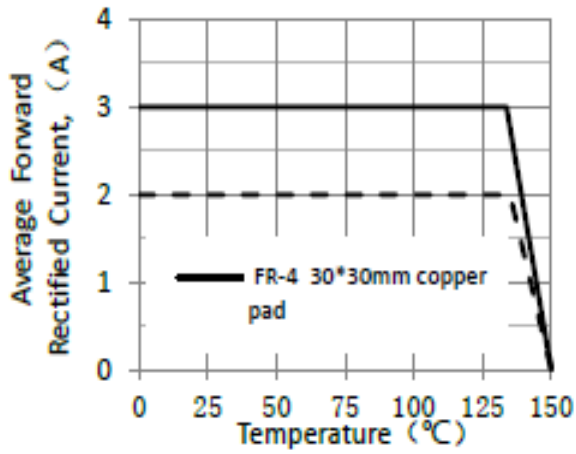


Figure 1. Forward Current Derating Curve

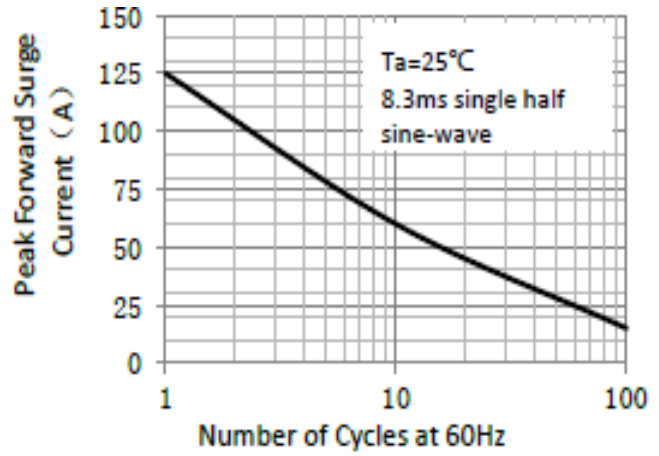


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

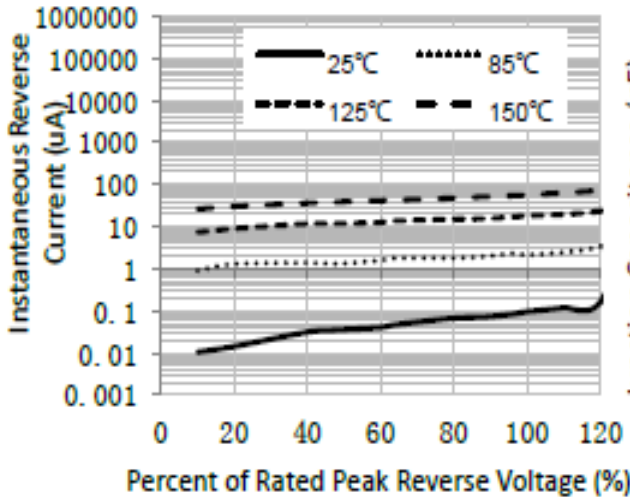


Figure 3. Typical Reverse Characteristics

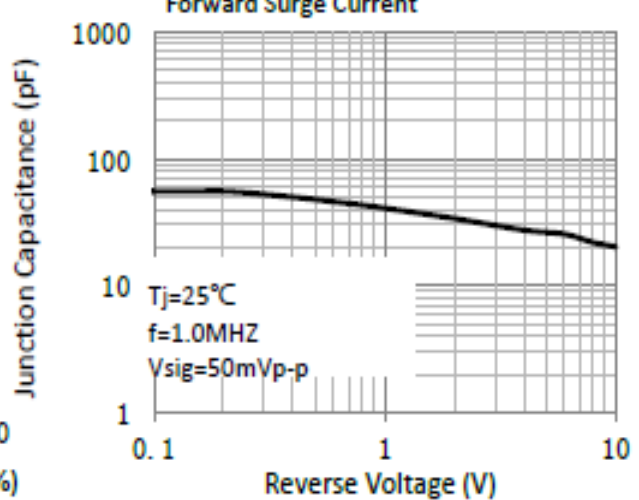


Figure 4. Typical Junction Capacitance

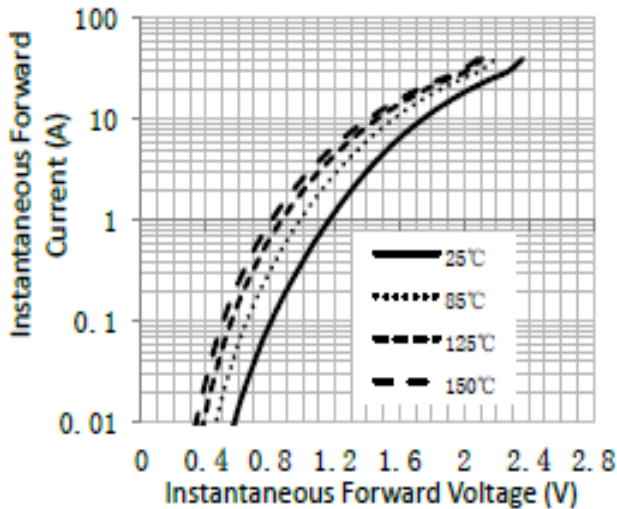
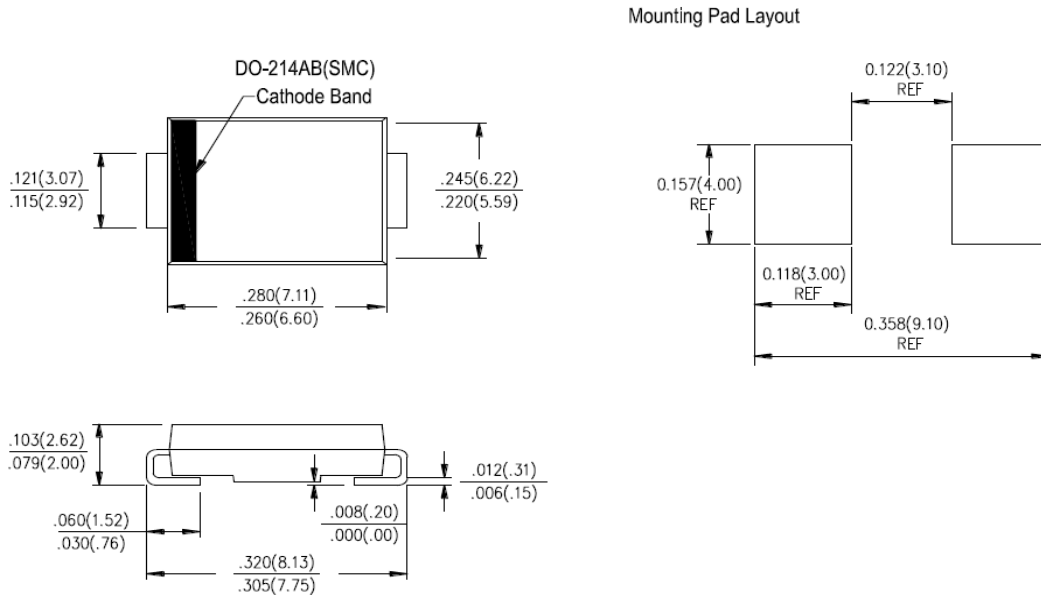


Figure 5. Typical Instantaneous Forward Characteristics

## Package Outline Dimensions

in inches (millimeters)

### SMC (DO-214AB)



## Revision History

Document Version	Date of release	Description of changes
Rev.A	2022.12.01	Released Datasheet
Rev.B	2023.10.20	Modify document format

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